

# Importance of Basic Principles of Design in Creating Spaces

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## ABSTRACT

Organization is the essence of any design and doing nothing is also a form of design. When it is an applied design, it is hazardous to design by neglect and default. Design sometimes suffers from a dilemma about its identity. It is not solely either an art or a science but is a combination of both. Applied design is not like physics or biology or writing or painting, but; it involves these areas and more. Design tends towards a generalized approach, collecting specifics from diverse areas as needed. Design is a combination of art, science, technology and intuition. Basic Design does contain sound proven principals and criteria for judging its success. These criteria centre on the relationship between human needs and human environmental possible with very basic elements used to derive solutions and paces as per human comfort. The measure of the success of a particular applied design is how well it meets the needs of the people experiencing it. Basic principles are mandatory to be learned, understood and used wisely to make the best contribution the process of Designing. This paper is an attempt to focus on explaining design with point, line plane and Volume.

**KEYWORDS:** visualization, science, Art, Human Comfort and Needs, Elements of Design

## INTRODUCTION:

The introductory foundation of art and design deals with the elements and principals of design composition. It entails a brief knowledge of Indian religion, traditional and contemporary art and their uses in home. It also gives experience in freehand drawing, scale drawing, knowledge of law of field size and creating designs of art objects. Design is very much a part of our daily lives, it is found in nature as well as in man-made environment. Shapes, forms, colours texture etc. all combine to become a unify whole, which is commonly called "a design" arrangements one becomes aware of shapes, form, colour and texture. When each individual part (element), unifying in its own way, has carefully been placed together with all the other parts, it results in a unifying and beautiful whole (one design). Designing then is the act of arranging things to create a single effect. In designing the "elements" are the things we work with and the principals are what we do with them (elements). Space, line, shape, form, colour, value and texture are the elements with which artist work at create a design. The principal such as- balance, movement, repetition, emphasis, and contrast are 'what' artists do with the design elements to make a pleasing and satisfying "art form"

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## CLASIFICATION AND PURPOSES OF DESIGN DESIGN CAN BE CLASSIFIED AS UNDER:-

- Art from design i.e. fine art such as painting, wall hanging, sculpture, abstracts, rangoli, Alpena etc.
- Applied design i.e. applied art such as architectural design, interior design, commercial design, equipment design, textile design etc.

For the 'ART FORM' i.e. fine art, maximum thrust is on the aesthetics, whereas for the 'APPLIED FORM' designing is a purposeful activity in which utilization, efficiency and function along with aesthetics is given importance.

Among the other purposes of design are:-

1. To organize elements into unified wholes.
2. To bring the gap between things and people.
3. To improve human accommodation with our physical surroundings.
4. To increase the safety of interaction between people and their environment.
5. To increase the efficient use of things.
6. To save time and material and provide optimum utilization.
7. To act as a means of enhancing communication.
8. To decrease the coast of creation and maintenance of a designed items.

## POINTS TO BE CONSIDERED WHILE DESIGNING FOR APPLIED FORM OF DESIGN

Organization is the essence of any design. Doing nothing is also a form of design. Doing nothing is also a form of design. When it is an applied design, it is hazardous to design by neglect and default. Design sometimes suffers from a dilemma about its identity. Applied design is not like physics or biology or writing or painting, but; it involves these areas and more. Design tends towards a generalized approach, collecting specifics from diverse areas as needed. Design does contain sound proven principals and criteria for judging its success. These criteria centre on the relationship between human needs and human environmental possible. The measure of the success of a particular applied design is how well it meets the needs of the people experiencing it.

## FOUNDATION OF ART

To study the foundation of art one must know that it is. The simple meaning of art is "skill"; it can also be defined as human skill as opposed to nature, i.e. skill applied to music, painting, poetry, craft, profession etc. Art is mainly divided into two types, fine art and applied art. Fine art deals with the aesthetics, i.e. creating painting, sculpture, mural, abstracts etc. applied art is concerned primarily with the usefulness, function and comfort along with pleasure and aesthetics i.e. creating object, structure, craft etc. The introductory course on foundation of art and design deals with the elements and principals of design composition. It entails a brief knowledge of Indian religion, traditional and contemporary art and their uses in home. It also gives experience in freehand drawing, scale drawing, knowledge of law of field size and creating designs of art objects.

The objectives behind the study are:-

- To understand the elements and principals of design.
- To develop our understanding of application of art principals in design composition of regional, traditional and contemporary art, architecture, textile design, interior design, etc.
- To create design according to the principals of art.
- To enable one to appreciate the art.

## ELEMENTS OF DESIGN

As mentioned earlier, the knowledge of elements of design is very important because they are the main component, with which the artist works, to create a basic design.

## PRIMARY ELEMENTS

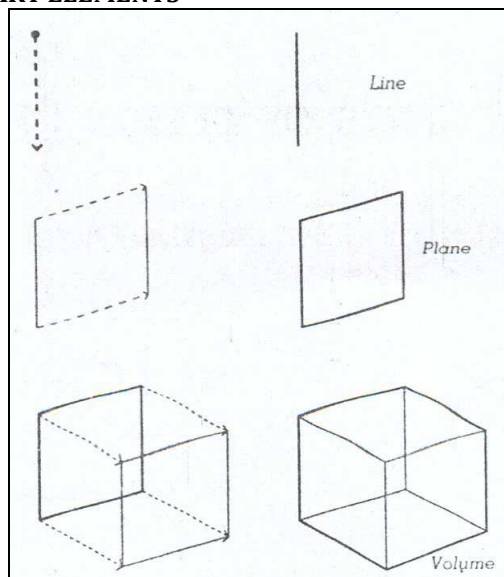


Figure 1: primary elements of design

Very primary elements of design are:

1. Point,
2. Line,
3. Plane and
4. Volume

## Point

Starting with the POINT as the prime generator of all design, first as a conceptual generator of all design, first as a conceptual elements, then as a visual elements in the vocabulary of design, -it is understood that "all pictorial design begins with the point that sets itself in motion the point moves. The LINE comes into being i.e. the first dimension. If the line shifts to form a plane, we obtain a two dimensional elements. In the movement from plane to spaces, the clash of planes gives rise to body (three – dimensional A summary of the kinetic energies which moves the point into a line, the line into a plane, and the plane into a volumetric dimension."

A point marks a position in space. Conceptually, it has no length width, or depth, and is, therefore, static, directionless and centralized. As the prime elements in the vocabulary of form, a point can serve to mark:

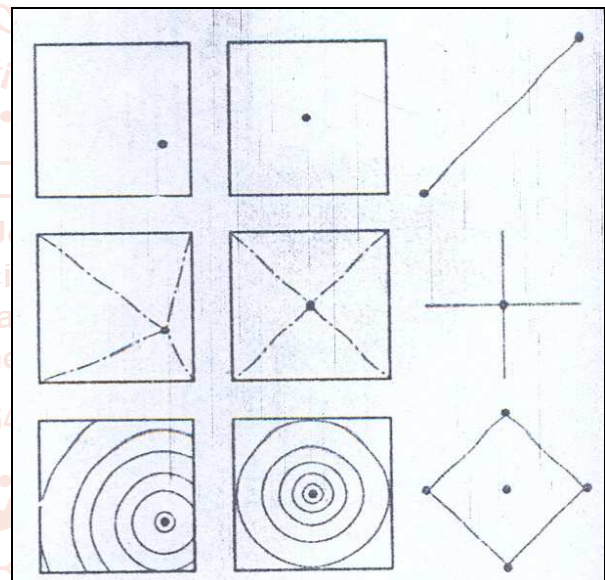


Figure 2: Point and Positions

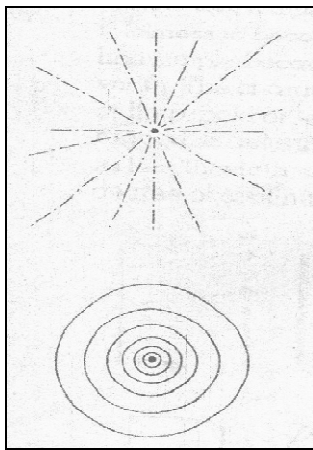
- The two ends of a line.
- The intersection of two lines.
- The meeting of lines at the corner of a plane or volume.
- The centre of a field.

Although a point is conceptually without shape or form, it begins to make its presence felt when placed within the visual field. At the centre of its environment, a point is stable and at rest, organizing surrounding elements about itself and dominating its field.

When a point is moved off-centre, however, its field becomes more aggressive and begins to compete for visual supremacy. A visual tension is created between the point and its field.

A point as the prime generator of form indicates a position in space.





**Figure 3: Point and centers**

A point extended becomes a LINE with properties of:

- Length
- Direction
- Position

A line extended becomes a PLANE with properties of:

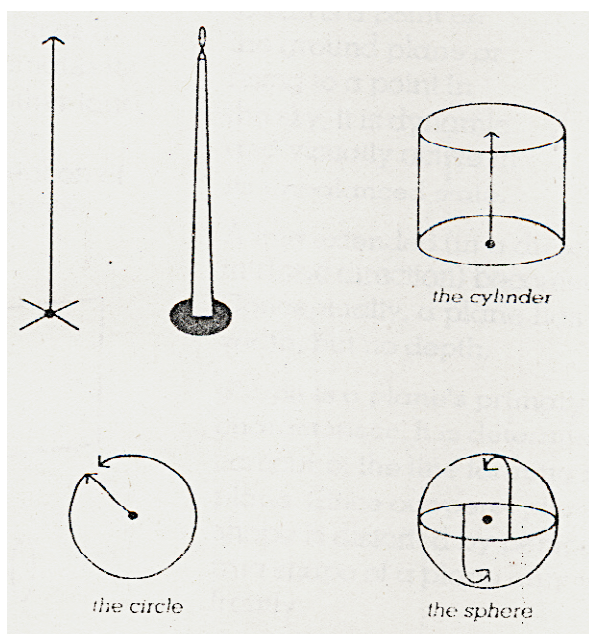
- Length and width
- Shape
- Surface
- Orientation
- Position

A plane extended becomes a VOLUME with properties of:

- Length, width and depth
- Form, space
- Surface
- Orientation
- Position.

A point has no dimension. To visibly mark a position in space or on the ground plane, a point must be projected into vertical linear elements such as a column, obelisk, or tower it should be noted that a columnar element is seen in plan as a point and therefore retain the visual characteristics of a point. Other point-generated form that share the point's visual characteristics are:

- Circle
- Cylinder
- Sphere



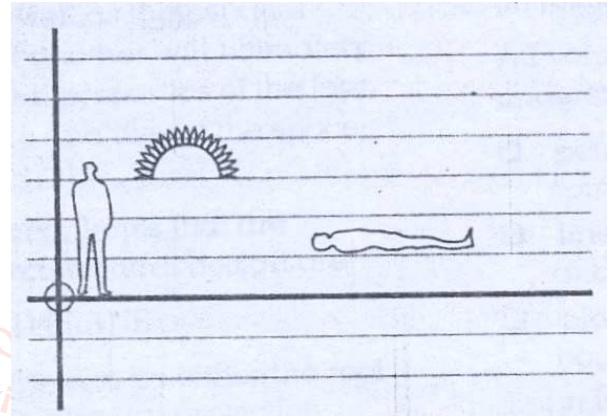
**Figure 4: Point in Sphere, cylinder and tower**

A point extended becomes a line. Conceptually, a line has length, but no width or depth, whereas a point is by nature static. A line, in describing the path of a point in motion, is capable of visually expressing direction, movement and growth.

### Line

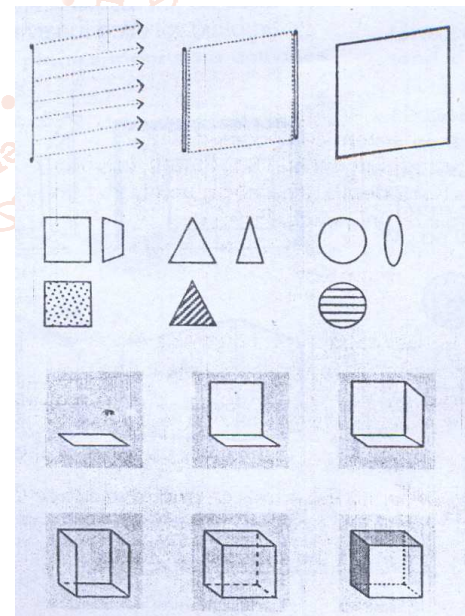
A line is an important element in the formation of any construction. It can serve to:

- Join, link, support, surrounding, or intersect other visual elements.
- Describe the edges of, and give shape to planes.
- Articulate the surfaces of planes.



**Figure 5: Point and Lines**

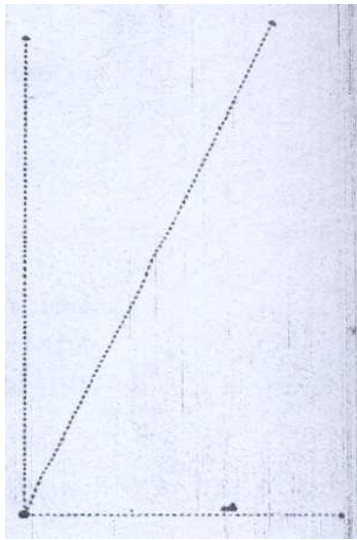
Although a line conceptually has only one dimension, it must have some degree of thickness to become visible. It is seen as a line simply because its length dominates its width. The character of a line, whether taut or limp, bold and tentative, graceful or ragged, is determined by our perception of its length/width ratio, its contour and its degree of continuity.



**Figure 6: Point Lines and Planes**

If continuous enough, the simple repetition of like or similar elements can also be seen as a line. This type of line has significant textural qualities.

The orientation or direction of a line can affect its role in a visual construction. While a vertical line can express a state of equilibrium with the forces of gravity, or the human condition, or mark a position in space, a horizontal line can represent stability, the ground plane, the horizon, or a body at rest.



**Figure 7: Oblique Line**

An oblique line is a deviation from the perpendicular or horizontal. It can be seen as a vertical line is falling or a horizontal line rising. In either case, whether it is falling toward a point of a ground plane or rising to a point in the sky, it is dynamic and visually active in its unbalanced state.

A line extended (in a direction other than its intrinsic direction) becomes a plan conceptually; a plan has length and width, but no depth.

#### Plane

Shape is a plane's primary identifying characteristic. It is determined by the contour of a line forming the edges of the plane. Since the perception of a plane's shape is distorted by perspective, we see the true shape of a plane only when we view it frontally.

The surface property of a plane, its colour and texture will affect its visual weight and stability.

In the formation of visual construction, a plane serves to define the limits or boundaries of a volume. Since architecture and interior designing, as a visual art, deal specifically with the formation of three-dimensional volumes of form and space, the plane becomes a key element in the vocabulary and architecture design.

Planes in architecture define three-dimensional volumes of form and space. The properties of each plane (size, shape, colour, texture) as well as their spatial relationship to one another will ultimately determine the visual properties of the form they define and the qualities of the space they enclose.

The general types of planes that are manipulated in architectural design are:

#### THE OVERHEAD PLANE:

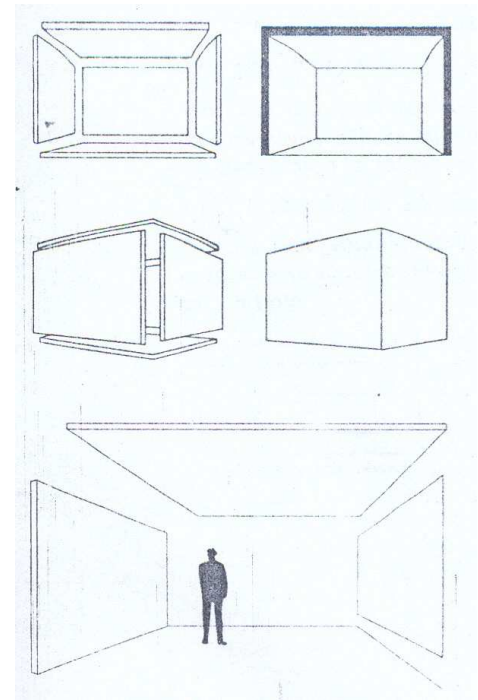
The overhead plane can be either the roof plane, a building's primary protection against the climatic elements, or the ceiling plane, the sheltering elements in architectural space.

#### THE WALL PLANE:

Vertical wall planes are visually the most active in defining and enclosing space.

#### THE BASIC PLANES:

The ground plane provides the physical support and the visual base for building forms. The floor plane supports activities within buildings.



**Figure 8: planes in 4 dimensions**

A plane extended (in a direction other than its intrinsic direction) becomes a volume. Conceptually, a volume has three dimensions: length, width and depth.

All volumes can be analyzed and understood to consist of:

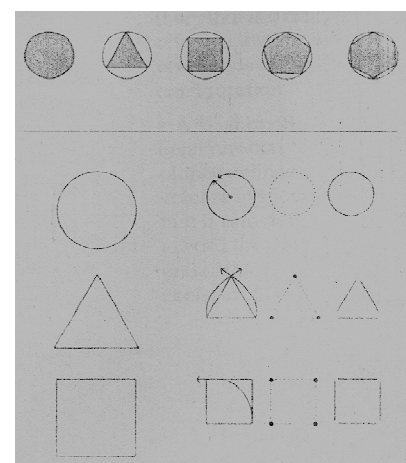
- Points (vertices), where several planes come together;
- Lines (edges), where two planes meet; and
- Planes (surfaces), the limits or boundaries of a volume.

Form is the primary identifying characteristics of a volume. It is determined by the shapes and interrelationships of the planes that describe the boundaries of the volume.

As the three-dimensional elements in the vocabulary of architectural design, a volume can be either solid space, displaced by mass or void space contained or enclosed by planes.

Given any composition of form, we will tend to reduce the subject matter in our field of vision of simplest and more regular shape. The simpler and more regular a shape is, the easier it is to perceive and understand.

From geometry we know the regular shapes to be the circle, and infinite series of regular (i.e. having equal sides meeting at equal angle) polygons that can be inscribed within it, of these the most significant are the primary shapes: the circle, the triangle and the square.



**Figure 9: Shapes and Planes**



**THE CIRCLE:** a series of points arranged equally and balanced about a point.

**THE TRIANGEL:** a plane figure bounded by three sides and having three angels.

**THE SQUARE:** a plane figure having four equal sides and four right angels.

#### HORIZONTAL ELIMENTS:

##### THE BASE PLANE

A simple field of space may be defined by a horizontal plane lying as a figure on a contrasting background. The following are the ways in which this field can be visually reinforced.

##### THE BASE PLANE ELEVATED

A horizontal plane establishes vertical surfaces along its edges that reinforce the visual separation between its field and the surrounding ground.

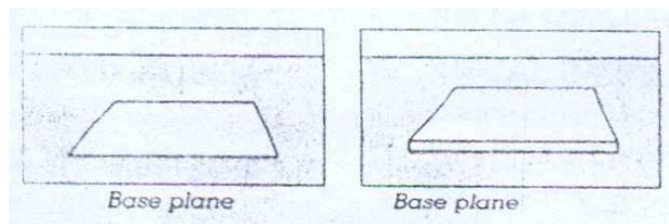


Figure 10 Base Plane

##### THE BASE PLANE DEPRESSED

A horizontal plane depressed into the ground plane utilizes the vertical surfaces of the depression to define a volume of space.

##### THE OVERHEAD PLANE

A horizontal plane located over head defines a volume of space between itself and the ground plane.

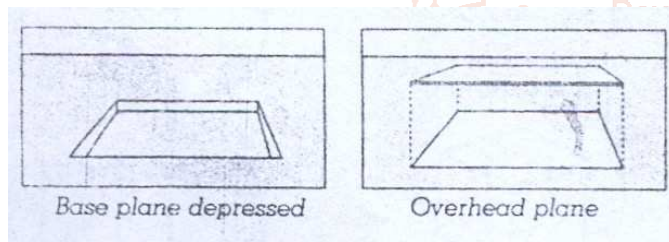


Figure 11: Base Plane Depressed and Overhead Plane

#### VERTICAL ELEMENTS:

Vertical elements of form are used to visually establish the vertical boundaries of space. Vertical forms are generally more active in our field than horizontal planes, and are, therefore, instrumental in defining a volume enclosure for those within it. Vertical elements of form also serve as supports for a building's floor and roof planes. They control the visual and spatial continuity between a building's interior and the exterior. Four planes enclose an introverted space and articulate the field of space around the enclosure.

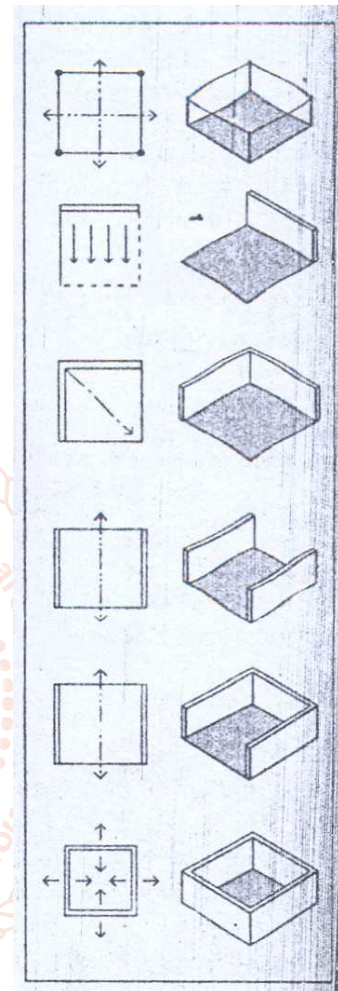


Figure 12: Vertical Elements in Design

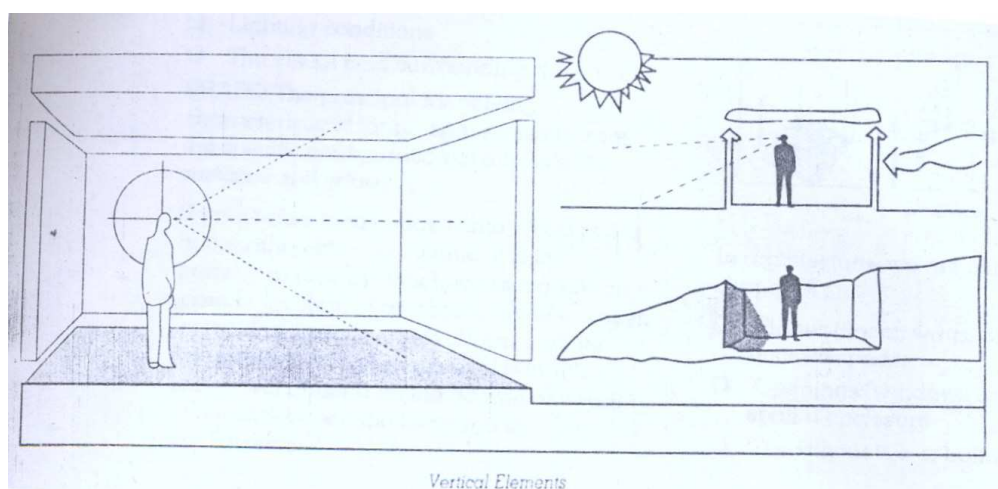


Figure 13: Vertical Elements in spaces

#### Design Principles

**SIZE:** The real dimensions of form, its length, width, and depth; while these dimensions determine the proportions of a form, its scale is determined by its size relative to other forms in its context.

**COLOUR:** The hue, intensity, and tonal value of a form's surface; colour is the attribute that most clearly distinguishes a form from its environment; it also affects the visual weight a form.

**TEXTURE:** The surface characteristics of a form; texture affects both the tactile and light-reflective qualities of a form's space

### Conclusion

Design has a basic start from a point which leads to a line and then planes and finally spaces. Every point plays an important role in placing any activity, element, person, item related to the circulation, function, aesthetic, usability and timeline added to it. Similarly lines play role in vision, capture, orientation, symmetry, linear distribution and much more. Planes lead to final resemblance of spaces, volumes, Energy positivity, negativity and most important is the volume to be put into function. An architect, artist, engineer always need to learn and understand the importance of these very basic principles of design to finally go for rendered and drafted projects to be designed and implemented.

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